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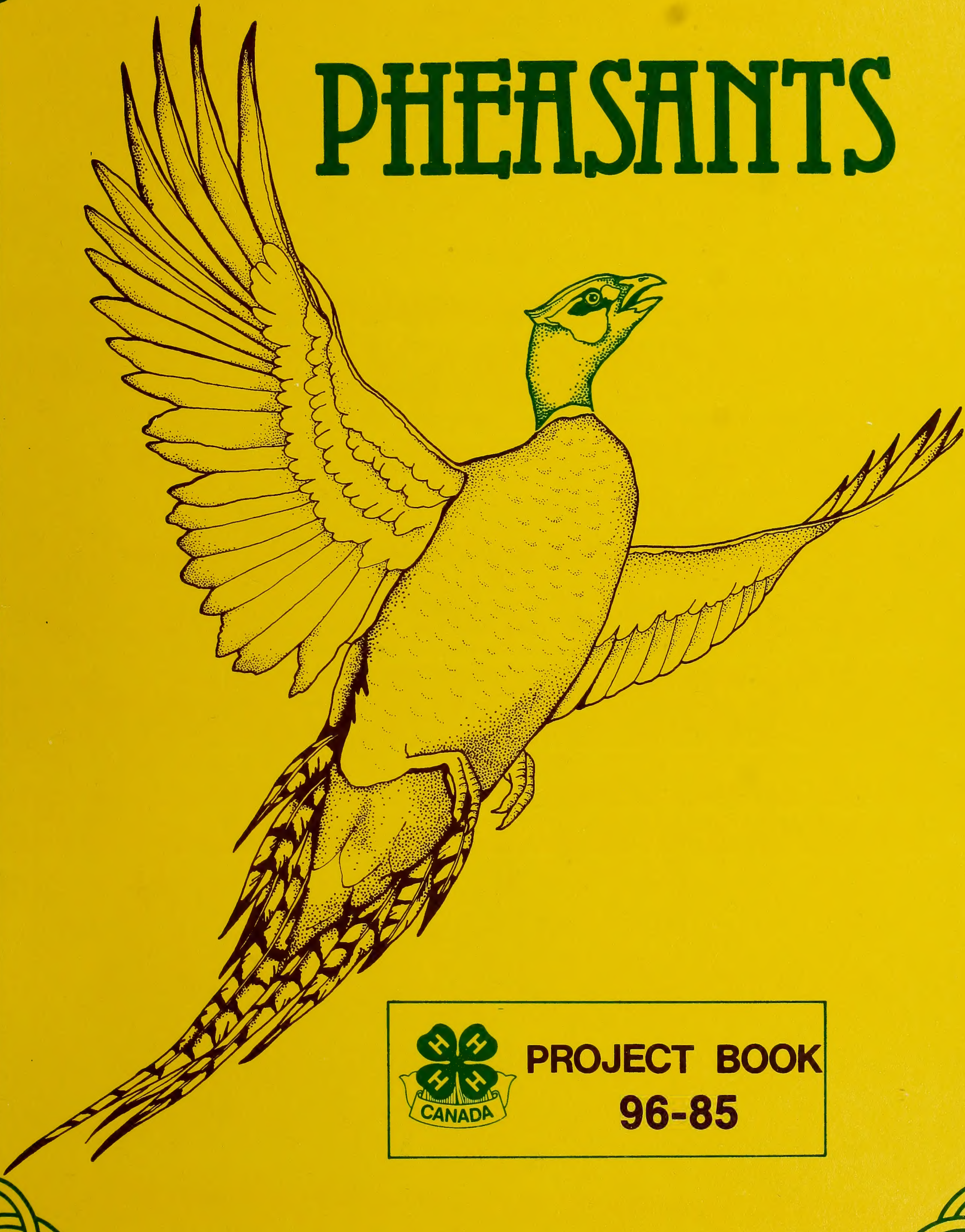
PHEASANTS



PROJECT BOOK
96-85

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MAR 29 1985

4-H MOTTO

Learn to do by doing.

4-H PLEDGE

I pledge
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community, and my country.

4-H GRACE

(Tune to Auld Lang Syne)

We thank thee, lord, for blessings great
On this, our own fair land.
Teach us to serve thee joyfully,
With head, heart, health, and hand.

TABLE OF CONTENTS

Page

Pheasant Project General Information 1

Pheasant Raising Guide 5
    Preparation for the Chicks 5
    Brooder 6
    Care of Chicks 7
    Enclosed Run 9
    Flight Pen 10
        Refer to Figure Two 14
    Clipping 11
        Refer to Figure One 13

Pheasant Trouble Shooting Section 17
    Problems and Solutions 17

Release 22
    Open Pens, Closed Pens 22
    Habitat 23
    Habitat Improvement 24
    Winter Feeding 24
    Figure Three - Aerial View 27
    Figure Four - Side View 28
    Figure Five - Feed Station 29

Pheasant Raising Chart 30

Fish and Wildlife Offices 31

Metric Conversion Tables 32

OBJECTIVES OF PHEASANT PROGRAM

1. To give 4-H members and their families a better understanding and appreciation of wildlife and the needs of wildlife.

2. To encourage the retention and development of wildlife habitat particularly on private land.

3. To provide enjoyment for present and future 4-H members and their families.

PHEASANT PROJECT GENERAL INFORMATION

4-H PHEASANT PROJECT

The 4-H Pheasant Project is a co-operative project with the Fish and Wildlife Division of Alberta Energy and Natural Resources. 4-H members who wish to join and become active in a pheasant project must first meet basic requirements and satisfy their project leader that they are sincere and prepared to accept responsibility for the project.

REQUIREMENTS

1. Members must have adequate facilities and equipment, and meet brooder house and pen requirements.
2. Members must have parent involvement.
3. Members must be approved by the Pheasant Project leader.

APPLICATION

Application to participate in the 4-H Pheasant Project must be forwarded by the project leader to:

4-H Pheasant Project
Brooks Wildlife Centre
P.O. Bag 1540
BROOKS, Alberta T0J 0J0

Member's name, project leader's name, telephone numbers, addresses of both and number of birds requested must also be included. Applications are available from your 4-H regional specialists.

LICENCE

Each member must have a Class "C" Game Bird Farm Licence. This free licence is issued by your local Fish and Wildlife officer. He requires your name, address, legal land description and the number of pheasant chicks that you will be raising. You are required to give the licence number to the staff at the Brooks Wildlife Centre prior to picking up your birds. This licence entitles you to keep pheasants in your pen until September 30, at which time these pheasants must be released.

A list of Fish and Wildlife offices is provided in the back of the book.

GENERAL

The Brooks Wildlife Centre provides free to each applicant a minimum of 25 and a maximum of 50 day-old chicks. All chicks must be picked up at the Wildlife Centre. The Wildlife Centre is located 11.2 kilometres east of Brooks along Highway 1. Signs are posted along the highway to direct people to the centre (see Map).

FEED

The Wildlife Centre provides free 25 kilograms of Pheasant Starter ration and 25 kilograms of Pheasant Grower ration with every box of 25 day-old chicks.

CHICKS

1. Deadline for applications is March 19, 1985. After this date, we cannot guarantee you will receive chicks.

2. A total of 25,000 day-old pheasant chicks are available for distribution to 4-H members that have qualified for the Pheasant Project during 1985. Applications are filled in the order that requests are received.

INFORMATION THAT WILL HELP

1. Pheasant Raiser Workshops will be held in several communities in March-April 1985. These workshops cover both basic pheasant rearing for the beginner and improved techniques in problem areas, such as winter feeding and predator control for the experienced raiser. For the location and time of the workshop nearest you contact your 4-H regional specialist.

2. For any technical assistance regarding requirements, rearing problems or questions about release areas or habit improvements, do not hestitate to call the Wildlife Centre at 362-4122.

3. For any general questions about this 4-H program, call the Regional 4-H Office closest to you:

Agriculture Centre
Lethbridge, Alberta T1J 4C7
phone: 329-5151

Bag Service 1
Airdrie, Alberta T0M 0B0
phone: 948-5101

Postal Bag 600
Stettler, Alberta T0 2L0
phone: 742-4481

Box 9, Room 208
Grande Prairie, Alberta T8V 2L8
phone: 539-2121

Box 1540
Barrhead, Alberta T0G 0E0
phone: 674-3351

Box 330
Vermilion, Alberta T0B 4N0
phone: 853-2811

Prov. Bldg, 3rd Floor
4920 - 51 Street
Red Deer, Alberta T4N 2A7
phone: 343-5111

Box 7777
Fairview, Alberta T0H 1L0
phone: 835-2291

4. Members may be visited by staff of the Brooks Wildlife Centre and/or Fish and Wildlife officers during the project to look at the pheasants and pen facilities.

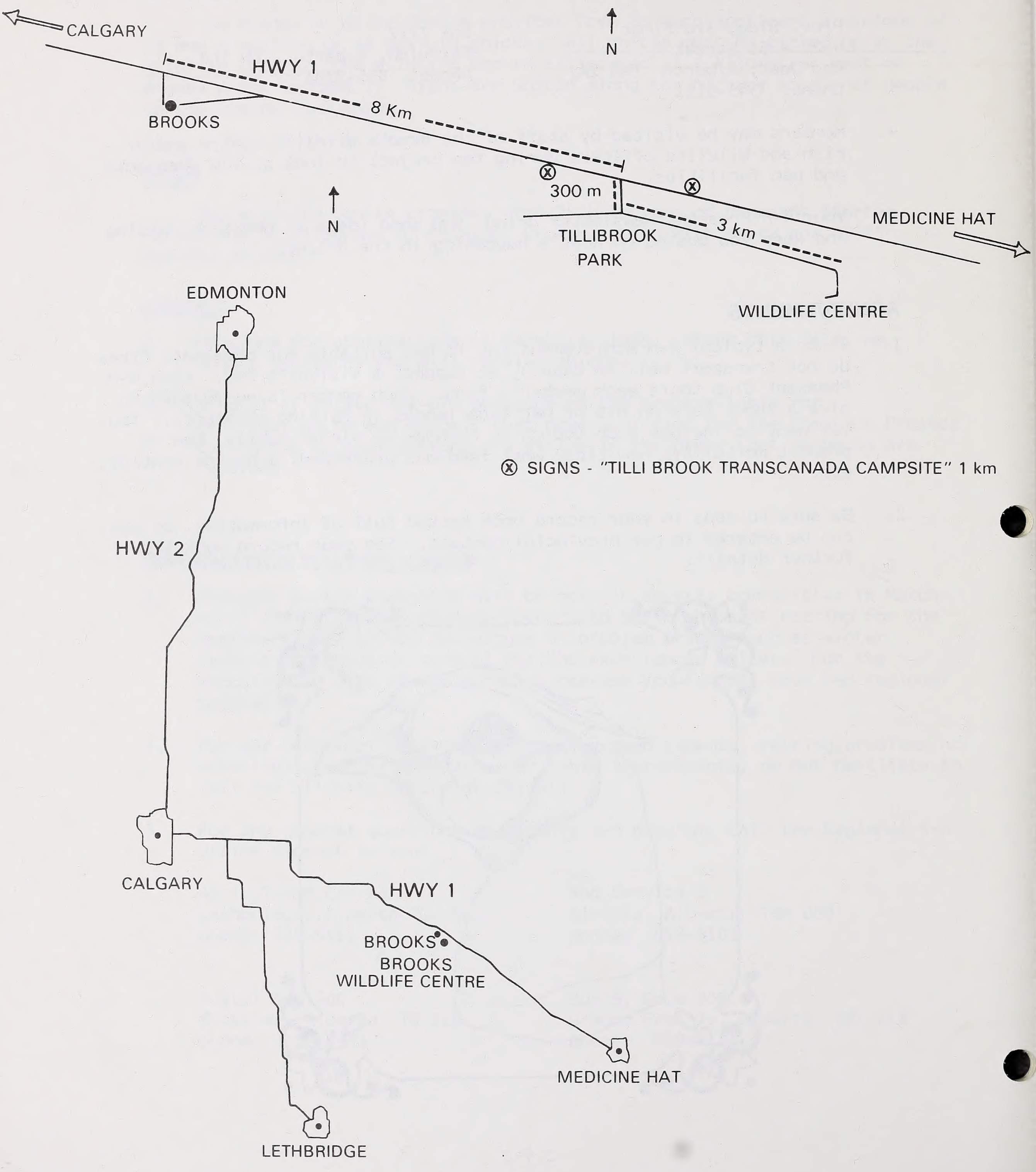
5. Your 4-H Pheasant Newsletter brings you good ideas on pheasant raising and keep you posted on what's happening in the project.

ACHIEVEMENTS

1. Since a typical 4-H Achievement Day is not suitable for pheasants (they do not transport well in cages), we suggest a Visitor's Day. Each 4-H Pheasant Club tours each member's farm. Each member is encouraged to give a short talk on his or her experiences in raising pheasants. You may want to include such topics as changes in birds' habits, how to prevent mortality, new tips, what feed was preferred, predator control, etc.

2. Be sure to send in your record book packed full of information, so you can be entered in our provincial contest. See your record book for further details.

MAP 1 LOCATION OF BROOKS WILDLIFE CENTRE



PHEASANT RAISING GUIDE

INTRODUCTION

Pheasants are wild birds and cannot be raised in the same manner as chickens. Pheasants are easily scared and never completely adapt to pen conditions and activity outside the pen. In addition, they can contract many diseases from poultry. The staff of the Brooks Wildlife Centre strongly advise that you do not raise pheasants with chickens or any other domestic poultry. They also recommend you do not use chicken brooder houses or runs unless there has been at least a "two year-dormancy" period when no poultry were in the houses or runs.

BROODER HOUSE

The brooder house should be weather-tight, free from drafts and rodent-proof. It can be a special pheasant brooder house, one that has been used for rearing chickens (with a two-year dormancy period), or a part of another building, such as a garage with a penned-in portion (See Figure 1, page 14).

In all cases, the brooding area should allow each bird at least 0.1 square metre of floor space. The pheasant is a wild creature and tends to be nervous, so provide ample brooder space. Remember, it's better to have more space than not enough. Twenty-five chicks require a space 1.6 metre times 1.6 metre, while 50 chicks need a space 1.6 metre times 3.2 metres.

PREPARATION FOR THE CHICKS

Brooder House Day-old chicks are delicate, easily injured and subject to diseases. Time spent preparing your facilities for the chicks is worthwhile.

Scrub the walls and floor of the brooder house with a good disinfectant such as Lysol or Antigerm 55. Ensure all cracks are clean and disinfected. If an old brooder house is to be used, remove all the old litter and scrape the floor and walls before disinfecting them. Clean and disinfect all feeding and watering equipment.

As soon as the house is dry, put in a good litter about five centimeter deep. Poultry peat moss (horticultural peat moss is too fine) and expanded vermiculite are best as they are fire proof while pine, spruce or cedar shavings or clean straw are also acceptable. Sand, sawdust or fine gravel are not recommended as these particles are very fine and the birds tend to eat them.

Place a layer of cloth, such as the type used for starting chicks, or white muslin cloth, over the litter for the first five days. This prevents chicks from eating the litter and starving, rather than learning to eat their proper feed. Do not use a slick paper or newspaper as chicks slip and may develop leg problems.

BROODER

The easiest way to brood 25 to 50 pheasant chicks is with a heat lamp as it is inexpensive and easily installed. Heat is directed at the chicks irrespective of the temperature of the brooder house. Use a 250 watt, red-end infrared heat lamp. If possible, get a lamp with pyrex glass; pyrex will not break if water is splashed on it. The infrared color attracts the birds under the heat and helps reduce feather pecking. Make sure the light is hung by a wire or light chain, not by the electric cord (see photo 1). The best heat lamp unit is a commercial one made for the brooding of chickens or pigs. These units have reflectors and built-in safety factors. Hang the heat lamp by wire about 76 centimetres above the floor. Ensure that the heat lamp is correctly plugged in and securely fastened by the wire or chain. The staff of the Wildlife Centre advise you not to use straw bales as a chick guard; this could become a fire hazard if a hot lamp fell onto a bale.

Heat from the lamp keeps the birds warm. The red colour helps to reduce cannibalism. The heat lamps need no hover but a reflector is desirable. Also, you can see the chicks at all times, making it easier to care for them.

Hovers with regular light bulbs as a source of heat do not provide constant heat and are not recommended. Oil and gas brooders heat the entire house and should not be used for hot weather brooding as they often overheat during the day. Battery brooders are unsatisfactory for pheasants.

Regardless of the type of brooder used, please read and follow directions carefully.

The lamp should be started a day before arrival of the chicks to warm the area and ensure that the heat lamp is working properly. Check the wire or chain that supports the lamp and ensure that you can change the position of the lamp easily.

FEED AND GRIT

You receive 25 kilograms of pheasant starter and 25 kilograms of pheasant grower free of charge from the Wildlife Centre with every box of 25 pheasant chicks. This should be sufficient to feed the chicks until they are eight weeks old. You need an additional 25 kilograms of scratching grain or cracked grain for each chick until they are released when 10 to 12 weeks old.
About 2.5 kilograms of chick-size granite grit should be enough for 50 pheasants through 12 weeks.

FEEDING AND WATERING EQUIPMENT

Two chick feeders 60 centimetres long are adequate for 50 chicks up to six weeks of age; an additional feeder 60 centimetres long is required until their release. Two one-litre chick waterers are needed for 50 chicks for the first six weeks and an additional nine-litre waterer until their release. If you use the plastic mason jar waterer, the red or green ones attract the chicks and help them find water.

CHICK GUARD

Use a chick guard to confine the chicks to the brooder for the first six days. A guard keeps them from straying away from the heat and prevents floor drafts. Any suitable material, such as cardboard or sheet metal can be used. Straw bales are not suitable as the chicks may squeeze into the crevices between bales and die. The guard should be 40 to 50 cm high. A 3.7 to 4.3 metre length of guard makes a circle about 0.92 metre to 1.2 metre in diameter. As soon as the chicks can hop over the guard (usually about six days) remove the guard.

CARE OF CHICKS

When the chicks arrive, take them out of the boxes, dip their beaks into warm water (20°C) and put them under the heat lamp. The first drink is important as chicks are usually thirsty upon arrival. They also learn what and where the water is.

Adjust the height of the heat lamp so the chicks huddle in a small circle with a vacant spot directly beneath the bulb. If the chicks bunch up directly under the lamps, it is too high and the chicks are not getting enough heat. If they spread out in a large circle, the lamp is too close to the floor and there is too much heat. The temperature at floor level should be 35°C during the first week.

When the temperature is correct and the chicks are comfortable, remember the following points:

1. Move quietly and smoothly when working around the pheasants so as not to startle them.

2. Leave the chick guard up continually for the first three days (four days if there is bad weather). On the fourth or fifth day, take the guard down during the day and put it up each night. On the sixth day, remove the guard entirely.

3. Remove the litter cloth at the end of the fifth day. If it becomes soiled before this time, turn it over so the chicks can use the clean side.

4. Inspect the chicks often during the first week, particularly at night, to make sure they are comfortable--not too hot or too cold.

5. After the first week, raise the heat lamp 5 to 7.6 centimetres to reduce the temperature. Let the chicks' circle under the lamp be your guide. Temperature at floor level should be 32°C in the second week.

6. At the end of the third week, discontinue the heat during the day, weather permitting, and turn it on again in early evening. By the end of the fourth week, weather permitting, you should be able to discontinue the heat entirely.

7. Allow some ventilation in the brooder house but ensure no drafts blow directly on the young pheasants.

FEEDING

1. For the first five days, feed the chicks pheasant starter crumbled on rough paper plates. Two plates should be enough for 50 chicks. If you buy paper plates, use coloured ones; the colour attracts the chicks to the feed. Buy the paper plates with rough surfaces that are not waxed.

2. Make certain there is feed on the plates for the birds at all times.

3. Remove litter from plates and feeders before refilling. Game bird diseases are easily spread when chicks eat soiled feed from dirty feeders.

4. On the third day, remove one plate and place a small chick-size feeder filled with pheasant starter inside the guard. After the sixth day, the chicks can feed from the feeders and the plates can be removed.

GRIT

1. Sprinkle a small amount of chick-size granite grit over the feed on the first day and every third day following. The shiny particles also help attract chicks to the feed. Do not use too much grit, as chicks may go on a "grit binge" and not eat enough feed.

WATERING

1. For the first three days, give the chicks water at room temperature (20°C). After the third day, they can drink cold water.

2. Put small stones or marbles in the chicks' water founts for the first six days, to keep the chicks from falling in and getting chilled or from drowning. Put a waterer on each side of the heat lamp so the chicks have water close by.

3. Clean the water founts every day and change the water daily. Chicks like water free of litter and dirt. Diseases can be spread quickly through dirty waterers.

ENCLOSED RUN

Pheasant chicks need sunlight and exercise in order to grow rapidly and develop into strong, healthy birds. The young chicks must be allowed outside at 10 to 14 days of age (weather permitting). The chicks need the outside conditions, such as sunlight and a chance to dust bathe, in order to develop well and grow healthy feathers. There are two outside pens needed; an enclosed run for the chick until they are six weeks old, and a larger flight pen which can be either enclosed or open (no overhead wire).

An enclosed run should be attached to the brooder house so the young can exercise. Each chick should have at least 0.3 square metres until six weeks of age; 25 chicks need a run 4 metre times 2 metre times 1.6 metre and 50 need a run 4 metre times 4 metre times 1.6 metre. The sides and roof of this run must be made of 2.5 centimetre mesh chicken wire as the chicks can squeeze through larger mesh up to four weeks of age. A guard board 45 centimtere in height should be placed around the bottom of the perimeter of the pen to protect the chicks from wind.

Once the chicks are ten days old, let them into the enclosed run attached to the brooder house, on warm, sunny days. Remember the following points:

1. Make sure the grass in the enclosed run next to the house is cut close to the ground. This prevents the chicks from becoming lost in tall grass and make is it easier to drive the chicks into the brooder house in the evening or when stormy weather approaches.

2. Remember to put a guard board 45 centimetres in height around the bottom of the perimeter of the pen (see photo 2). This guard board gives the young birds some protection from drafts.

3. Drive the chicks back into the brooder house before storms hit. Drive them into the house each night and let them out in the mornings until they are four weeks old. After four weeks, give them free access to both brooder house and enclosed run.

4. As soon as the pheasants are allowed into the enclosed run, place a feeder and waterer in the run so the chicks can feed and drink outside. The feeder should be moved once a week and the waterer twice weekly, to prevent diseases. Make sure feeding and watering equipment is kept clean.

5. Grit can be either mixed with feed or put in a separate tray for the pheasants.

FLIGHT PEN

Once the chicks are six weeks of age, they should be put in the large flight pen. They should not be allowed back into the brooder house. If the birds continue to use the house, you may have problems with feather pecking and poor development.

The flight pen provides room for the six-week old chicks to grow and develop. A big yard is essential as overcrowding leads to feather picking and cannibalism. From six weeks on, each pheasant requires from 2 to 3.7 square meter of space; 25 chicks need a pen from at least 5 metre times 10 metre times 1.6 metres to 10 metres times 10 metres times 1.6 metres, while 50 pheasants need a pen from 10 metres times 10 metres times 1.6 metres to 10 metres times 20 metres times 1.6 metres. There must be cover in all pens as cannibalism often occurs in bare pens. Young pheasants peck at any object and peck at one another if there is no cover. Natural grass, rape, cereal crops and weeds such as sweet clover provide good cover. These crops should be planted early so that cover is 20 to 25 centimetres high before pheasants are put into the pen (see photo 3). Shade should be provided either by bushes or by arranging green branches into stooks (see photo 4).

Walls of all pens should be 2.5 centimetre mesh poultry netting and 1.8 metres in height. The wire should be dug at least 15 centimetres into the ground to prevent predators from digging into the pen. A guard board 45 centimetres in height should be placed around the bottom of the perimeter of the fence (see photo 2).

The two types of flight pens differ in the roof; open pens need no overhead wire, while closed pens are completely enclosed. A closed pen has a roof of 5 centimetre mesh poultry netting or rope neeting. The overhead netting must be securely fastened with hog rings or light wire such as stove pipe or bailing wire so that no gaps are open; pheasants quickly find any openings and escape. The wire or netting must be stretched tightly and supported to prevent the roof from sagging in the centre.

Open pens are less expensive and easier to construct than closed pens. Release of the pheasants is easier in open pens as they fly out once fully developed. Because they release themselves, open pens must be placed close to good cover so that the pheasants do not have to fly far. The walls of open pens should be topped with 5 centimetres of poultry wire mesh at least 60 centimetres wide with at least 15 centimetres hanging into the pen (see photo 5). This overhang prevents animals from climbing over the fence and pheasants from climbing out of the pen. The pheasants must be wing-clipped at six weeks of age before being placed in open pens.

1. There should be a 45 centimetre guard board around the bottom of the perimeter of the flight pen (see photo 2). Pheasants do not adjust well to activity near their pen. They will be nervous, "flighty" and bunch up into the quieter, more protected areas of the pen. If the pen is close to any areas of activity such as a driveway or machine shed, or if animals are bothering the pheasants, boards should be placed around the pen to shield the birds. Once the pheasants cannot see people or animals moving nearby, they settle down and use the entire pen. Also, pheasants may not return to an open pen during winter if they are bothered by activity when growing up in the pen.

2. If the flight pen becomes bare of cover, provide fresh greens daily. Spread these greens throughout the pen (see photo 4).

   In a bare pen, cannibalism often occurs. Putting green branches or cut green feed, arranged in stooks in the pen curtails cannibalism as the pheasants have cover and something to peck at. The first indication of cannibalism is bare-backed birds and plucked tail feathers in the pen. The best remedy for this is additional cover and pen space with plenty of roosts.

3. There should be two 0.6 metres feeders in the flight pen for each 50 pheasants. These feeders should be protected by a lean-to that is 36 to 41 centimetres high so the feed is protected from sun and rain. There should be at least one nine-litre waterer. As previously mentioned, the feeders should be moved twice a week onto fresh, dry ground. By moving the feeding and watering equipment, you reduce the chance of the pheasants eating grain off contaminated soil and thus prevent the spread of disease.

4. Grit can be supplied in a separate tray for the pheasants.

5. Have a bare patch of ground, or a pile of dirt, ashes or fine sand for the birds to use for dust baths. This improves their plumage as the birds "bathe" in the dirt to remove any excess oils from their feathers.

6. If the young birds are to be placed in a large open pen, it is necessary to clip the flight feathers from one wing only. This is done between the fifth and sixth week.

   Clipping the flight feathers is not painful for the pheasants; it is similar to a haircut for us.

   Use a fish landing net to catch the birds. Be careful not to sweep the net towards a bird when it is flying. Try to have the birds run into the net.

Clipping requires two people; one to hold the bird and the other to spread the wing and clip the feathers. Use an ordinary pair of scissors or small tin snips. Clip along the imaginary line along the coverts as indicated in Diagram A of Figure 1 on the following page. Clipping of the wing is accomplished by cutting off the portion of the primaries and secondaries which are under the imaginary line. In looking at Diagram B of Figure 1 we see the pheasant wing after clipping, make note of how the tertial feathers are left on the wing to protect the pheasant's back from wind and rain.

Clip only between five and six weeks; do not clip at any other time. If you clip before this, the birds regain flight too quickly. If you clip later, their flight capabilities are hindered.

After clipping, do not leave any feathers on the ground in the pen. Pheasants will peck and play with these feathers and may eat them. They then might start a bout of feather pecking.

A good raising tip is to clip only one bird at first and see if it can fly out. If it can't you have clipped it correctly. If the bird does fly out, you'll have to clip more of the feathers off the next bird to ensure that it does not leave the pen.

RELEASE AGE

You may start to release the pheasants when they have reached 11 to 12 weeks of age. Pheasants should not be released before this as they are not strong flyers until 11 to 12 weeks of age. Only if a chick is continually picked should you release it before 11 or 12 weeks of age. (See Trouble Shooting, No. 1)

Seventy percent of your birds must be released. The thirty percent remaining can be kept over the winter and then released in the spring.

FIGURE 1

Diagram A.

THE PHEASANT WING
Before Clipping

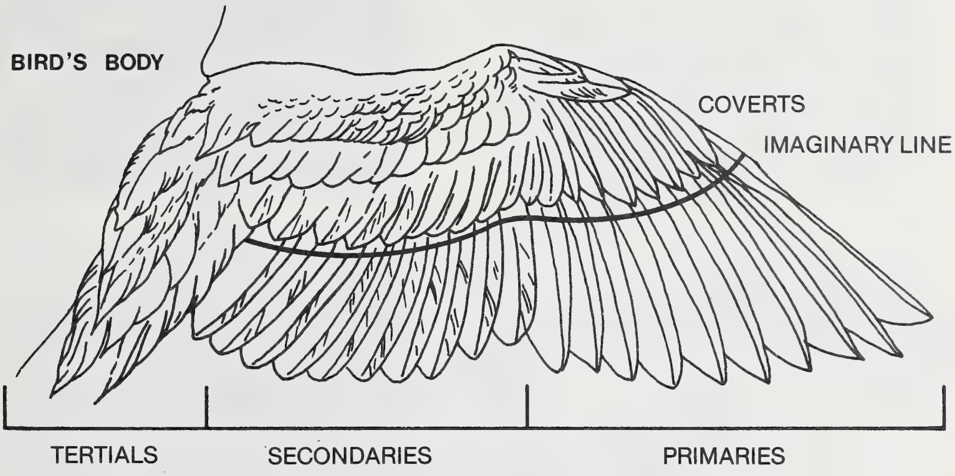


Diagram B.

THE PHEASANT WING
After Clipping

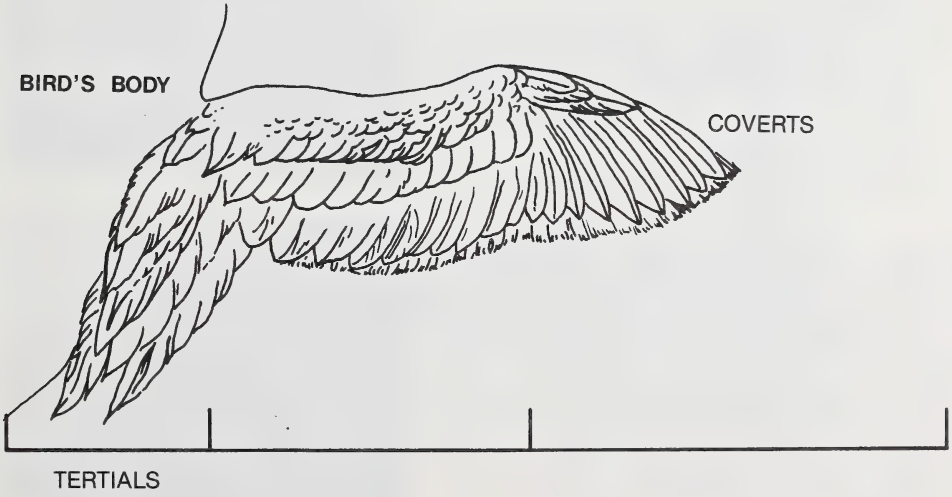
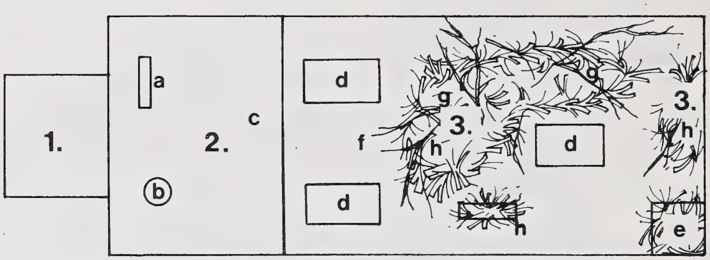


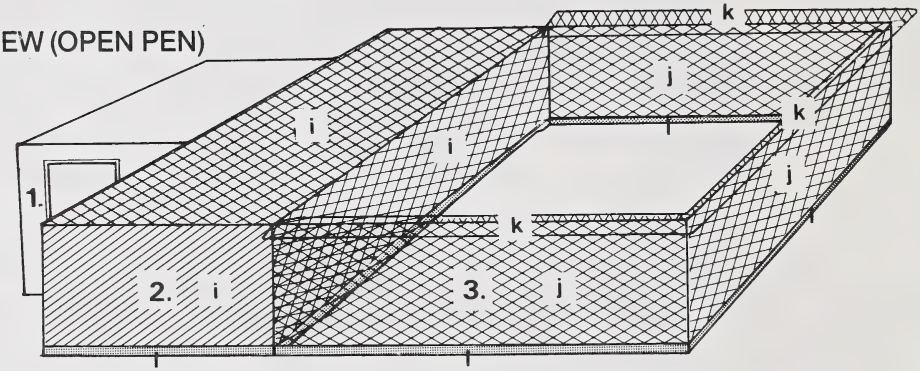
FIGURE 2

IDEAL PHEASANT PEN - for 25 pheasants

TOP VIEW



SIDE VIEW (OPEN PEN)



(scale 3 mm = 30 cm)

KEY

1. BROODER HOUSE — .1 sq m/chick
2. ENCLOSED RUN — .3 sq m/chick
3. FLIGHT PEN — 2 - 3.7 sq m/chick

a - feeder
b - water
c - grass in run mowed
d - shelters, with feeder — water underneath
e - shelter with brush piled on top
f - high grass, grain, a corn or rapeseed
g - straw bales with brush piled on top
h - brush or brush piles
i - 2.5 cm mesh wire on enclosed run
j - 5 cm mesh wire
k - overhang (for open pen only). The closed pen has 5 cm wire mesh over on the roof
l - guard board

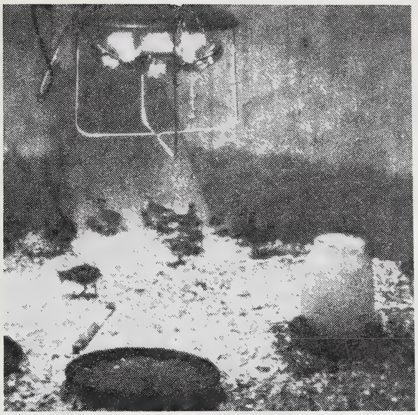


PHOTO 1

CHICKS IN A BROODER HOUSE

Notice that a corner guard prevents the chicks from clumping in corner. The heat lamp is suspended by chains, not the electrical cord. The floor covering is shavings.

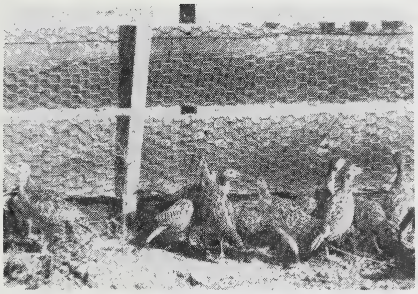


PHOTO 2

GUARD BOARD IN ENCLOSED RUN

The guard board protects the chicks from drafts and prevents them from poking their heads through the wire and ''scalping'' themselves.

PHOTO 3

COVER IN FLIGHT PEN

Notice the rapeseed used as cover, a swath cut to give the pheasants an open area. Notice the dust-bathing spots in the foreground.

PHOTO 4

PHEASANTS PICKING AT COVER IN PEN

The branches were piled in the pen, then sweet clover cuttings piled on top. The chicks are picking at the flower of the sweet clover.

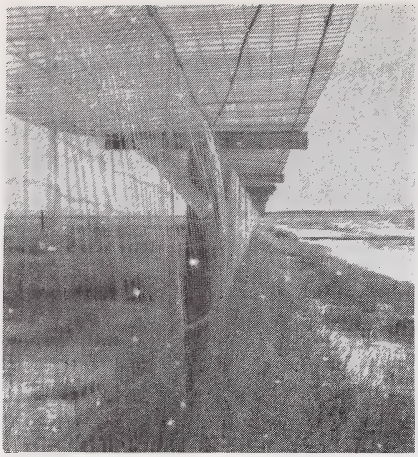


PHOTO 5

WALL OF OPEN FLIGHT PEN, WITH OVERHANGING

Notice that the overhang projects into the pen, as well as away from the pen.

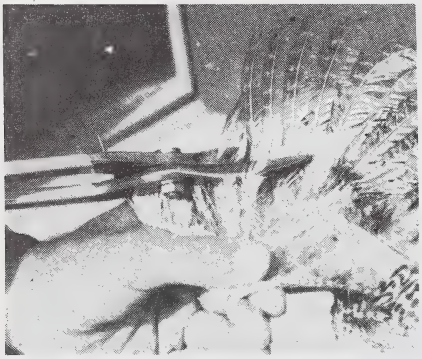


PHOTO 6

CLIPPING THE FLIGHT FEATHERS

Notice that one hand is spreading the wing while the other hand is using the snips.

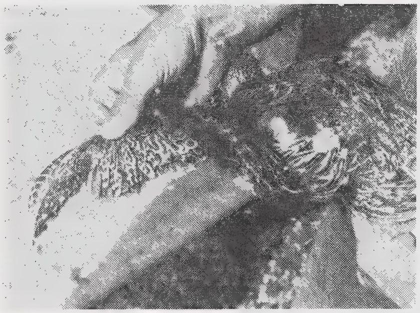


PHOTO 7

THE FINISHED CLIP JOB

Notice that the tertial feathers, the long feathers beside the body, were left. These feathers will give the bird added protection for its back.

PHOTO 8

A GOOD RELEASE AREA

The cattails and willows in the foreground will give the newly-released pheasants cover while they feed in the swathed field. The cover extends around the edge of the field, providing the pheasants with a protected travel lane. This thick cover will be good winter cover as it is beside a stubble field.

PHEASANT TROUBLE SHOOTING SECTION

INTRODUCTION

This section outlines some of the major problems that may arise during the pheasant rearing project. Should you have a trouble with a specific problem, please do not hesitate to contact the staff of the Wildlife Centre for help.

This section deals with causes of common problems and their solutions. Most of the problems you will encounter with your pheasants can be solved with common sense. One major point to keep in mind at all times is that you are working with wild birds, and as such, they require additional care and extra caution.

PROBLEMS

1. Loss of tail feathers and/or blood on the tail end of pheasants.

Cause This problem is caused from pecking or cannibalism in the group of pheasants. This practice can result from one or all of the following: poor cover conditions in the pen, overcrowding or boredom. Depending on the condition of the pen, cannibalism usually starts between three to six weeks of age and may last up to eight weeks of age.

Solution The best solution is to eliminate the cause. By adding brush piles to the pen and placing stooks, (formed from green feed) you improve the cover in the pen. If hung in the pen, the stooks also give the birds something at which to peck and pull, eliminating the boredom. Enlarging the pen also helps the problem by relieving overcrowding.

Remove the injured birds and place them in a small hospital pen. Supply food, water and cover. Once the bird recoveres, if fairly mature, release it prematurely to the wild. If, however, the bird is too young (less than six weeks), place the pheasant back in the pen and watch it closely. If the pecking occurs again, you have no choice but to release the pheasant to the wild. If you do not release the pheasant, severe cannibalism can result in its death.

Cannibalism may be the major problem facing you; the best remedy is not to give it a chance to start as cannibalism is hard to control once started. Through the allotment of sufficient pen space and good cover (which can be achieved by planting rape, corn, oats, etc. in the pen first thing in the spring), you can avoid cannibalism. (See photo 3 and 4.)

2. Pheasants disappearing from brooder house or pen.

Cause Pheasant chicks are very agile and fly at 10 days of age. Their wild nature results in endless attempts at escaping from their pen or brooder house. Holes in pens, cracks in walls, unscreened air vents all provide a mode of escape for the ever-persistent pheasant chick. Any hole more than 3.5 centimetres in diameter provides a passport to freedom for the young pheasant.

If the rearing area is free from small holes and cracks in the brooder house and pen, there can only be one answer. A predator is removing the pheasants. In most cases, the predator is domestic; it could be in the form of a cat or dog. However, the mink, weasel, skunk or owl are all opportunists and will not pass up the chance to prey upon a pheasant in the pen.

Predators usually leave signs of their work; feathers, blood and evidence of digging or burrowing are all clues to the act that occurred. Be sure your control methods are directed toward the guilty party and not harming innocent or protected animals and birds. Remember that hawks, owls and falcons are protected because they do a lot of good in control of rodents and other pests. Do not shoot these birds. Call your wildlife officer or the Wildlife Centre, if you need help.

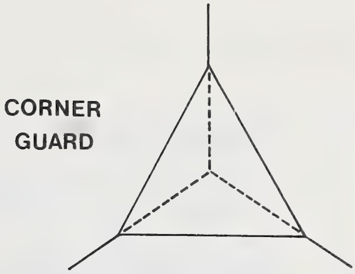
Solution By ensuring the pen is sound, with no holes or cracks, you avoid this problem. In the case of predators, ensure that your predator guards are intact; your wire has been buried into the ground and at a right angle, your pheasant guard board (base board 45 centimetres high at the base of pen) is up, and in the case of the open-topped pen, that the overhang on both the inside and outside of the fence has been installed. (See photo 5.) If you require assistance, contact your local Fish and Wildlife officer or the Brooks Wildlife Centre.

3. Pheasants die in large numbers in the corner of brooder house.

Cause This is common during the first week or two and occurs in the late evening or night after the chick guard has been removed. The birds huddle in the corner for warmth; first a couple of birds together, then a half dozen, soon a dozen and before long, 25 or 50. The birds literally pile up. The end result is that the birds on the bottom are suffocated.

Solution The solution to this problem is to eliminate the corners in the brooder house. This can be done by angling plywood or metal across the corners so there are no right angles (page 19). Be sure that young pheasants cannot get behind a "corner chick guard" as they may become chilled. (See also photo 1.)

Keep a close eye on your pheasants during that first two weeks, particularly in the evenings when piling is more likely to occur. This allows you to catch the problem before it becomes too serious.



4. Pheasant is listless, huddles near the ground, and the feathers are ruffled.

Cause This may be a sign of a chilled bird, and if allowed to persist, may develop into sickness. Chilling usually occurs in the younger birds and is a result of being away from the brooder house and/or heat lamp.

Solution The bird affected by chilling should be placed under the heat lamp with food and water readily available. If the condition of the bird does not improve in a few days, the bird should be removed and sent to the nearest veterinary laboratory for examination.

The best cure for this problem is to ensure that the brooding area and house are free of drafts. If the birds are less than four weeks of age, be sure to drive them back into the brooder house during cold, wet weather.

5. Pheasant droppings are loose and/or of abnormal colour.

Cause A variety of factors can affect the feces of pheasants such as a change in food, chilling or some form of sickness. The best thing to do is watch your birds and keep track of how wide-spread and persistent the problem is.

Solution Ensure that old feed is cleaned up and feeders and waterers are clean. Most disease problems can be avoided by maintaining sanitary conditions. If the problem is in the food (i.e. change of feed, or picking up some old feed on the ground), the bird will probably return to normal in a few days. However, if the problem continues and the bird's condition degenerates, contact the Wildlife Centre personnel for advice.

6. Pheasants flying out of open-topped pens too early.

Cause Improper clipping of the pheasants' wings or absence of overhang on the inside of the pen.

Solution If the overhang is not on the inside of the pen, the pheasants can walk up the wire wall by flapping their wings and using their legs and escape into surrounding cover. This problem can be remedied by insuring that the inside overhang is intact. (See photo 5.)

6. Solution cont'd.

If the birds are actually seen flying out, the individual may attempt to recapture and reclip his pheasants, being sure to clip only the juveniles (worn and tattered feathers). However, it may be wise to leave the pheasants be, attempting to catch them may force the remainder to fly from their pen and you might lose all your birds. If you do leave your birds, you will have to exercise caution in working around the birds to ensure that they are not frightened from the pen.

7. Pheasants failing to feather out properly.

Cause If the pheasants are allowed to remain inside the brooder house too long, proper feather development does not take place. Cooler temperatures help stimulate feather production; the warmth of the brooder house delays feather growth. This problem usually occurs between five to six weeks.

Solution Ensure that your brooder house is well ventilated. After six weeks of age, do not allow the pheasants back into the brooder house. This forces them to make use of the outside shelters you have provided for them (e.g. brush piles, lean-tos, etc.).

8. Pheasants' feathers on the top of their heads are ruffled and missing; there may be some bleeding.

Cause This is normally caused by the absence of the 45 centimetres guard board around the base of the pen. The pheasants, because of their nervous nature, are constantly bumping and banging their heads against the wire. Often the birds get their heads through the wire mesh and scrape the top of their heads. In severe cases, when bleeding occurs, this may promote cannibalism as the other birds will peck at the bloodied area.

Solution This problem is easily solved by ensuring that the 45 centimetres guard board is intact. (See photo 2.) If some cannibalism occurs, follow the suggestions outlined under "cannibalism" (Problem No. 1).

9. Pheasant appears to be smaller, weaker and of poor appearance in comparison with other pheasants. This condition lasts for several days or weeks.

Cause The pheasant or pheasants in question have probably contracted some form of sickness. This condition can be caused from a number of things which takes a professional to diagnose accurately.

Solution Be sure the highest standard of cleanliness is maintained in regard to yourself and the birds as most sickness results from poor sanitary conditions. However, even the most sanitary of pens can become infected by outside sources (mice, etc.).

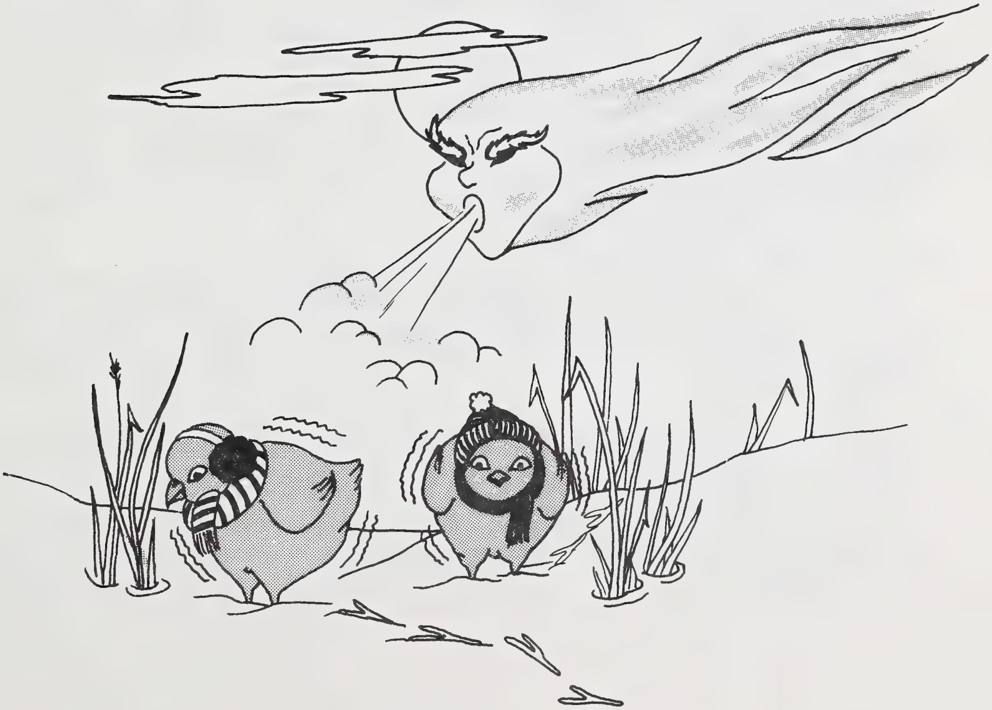
Contact your district agriculturist, local veterinarian or the Brooks Wildlife Centre for assistance. The sick birds should be removed from the pen and sent in for examination. Watch the remaining pheasants closely to ensure they do not contract the same sickness.

10. Pheasants are healthy but have abnormal physical appearance.

Cause This problem may take several days or weeks to show up. Examples of physical abnormalities may be a crooked neck or deformed feet. These may be hereditary or a result of abnormal hatching conditions.

Solution There is nothing that can be done for these birds. If the problem worsens with time, these birds should be killed.

These birds have a very difficult time in the wild, and once released, almost certainly become subject to predation. The kindest thing to do for these birds is to dispose of them at an early date.



RELEASE

The pheasants should be released directly into good cover with the least amount of disturbance. Your method of release depends upon the type of flight pen and distance of this pen to good cover.

OPEN PEN

The open pen should be close to good cover. The pheasants start flying out at 10 to 11 weeks of age. Once the first bird has flown out, move a feeder and waterer to a sheltered spot along the outside of the pen. Birds can always get feed and are more likely to return during winter if they can get feed. Continue to provide feed, grit, and water inside the pen until all birds have flown out.

It is important that you put feed and water outside the pen when the first birds leave. The wire at your pen wall confuses the bird and it may take the bird awhile to learn that it has to fly over the fence, not walk through it. Food and water outside the pen keep your young pheasants around the pen.

CLOSED PEN

If you built an enclosed flight pen very close to good cover, open the gates and allow the pheasants to wander out of the pen. Do not drive them out of the pen. Place a feeder and waterer outside of the pen for the pheasants as they become accustomed to the new area. Restrain the family dog or cat for a few days. If your pen is not close to cover, you have to catch and put the pheasants into crates. Be careful not to injure the pheasants when catching them. When releasing the pheasants, place the crates close to good cover, open the doors and walk away quietly from the crates. Allow the pheasants to walk or fly out on their own; do not shake the crates or throw the birds into the air.

Choose areas of thick cover such as ungrazed brush or shelterbelts and cattail patches that are close to grain fields or weed patches, as in (photo 8). Bushy draws or coulees close to grain fields are also ideal release sites. The young pheasants are inexperienced and thick cover gives them protection from predators.

* Once you release the pheasants contact your local Fish and Wildlife officer to tell him the release site.

If you have questions about the release site, do not hestitate to call the staff of the Wildlife Centre or your local Fish and Wildlife officer.

HABITAT

Natural environment, or habitat, is essential for the survival of the pheasants after release. Without adequate cover and food, the pheasants will not survive. All release areas should have blocks of winter cover, nesting cover and summer feeding and loafing areas inter-connected by strips of cover; a mixture of cover types is best as it provides variety. For example, pheasants use shelterbelts for roosting and travelling and feed in fields along the edge of the shelterbelt. A generalized description of good pheasant habitat in southern Alberta is:

cropland	60-85%
grassland	5-15%
undisturbed weedy vegetation	5-15%
woody cover	5-10%

in a well-mixed pattern. See figures 2 and 3. Winters are more severe in central Alberta and more winter cover close to food sources is needed. This heavier winter cover can take the shape of poplar bluffs or slough beds that have plenty of cattails.

A pheasant's requirements for cover change over the course of the year. In spring, cock pheasants establish crowing territories, often along bushy fence lines, ungrazed shelterbelts or cattail patches. Pheasant hens need tall grasses and weeds such as sweet clover or sedge for nesting. Hayfields, unmowed roadside ditches, ungrazed weed patches, wetland areas and the edges of ungrazed shelterbelts are used by nesting hens. In summer, pheasants use sedge meadows and cattails, cereal crops, unmowed hay fields and bushy areas for feeding and loafing cover. Pheasants dustbathe in the dirt along the edges of fallow fields or roadsides.

By autumn, pheasants feed heavily on waste grain in harvested fields that have not been plowed, as well as seeds in weed patches and along unmowed ditches. They roost in shelterbelts, brush patches and along irrigation canals and ditches.

Winter is the most difficult season for pheasants and thus winter cover is essential for their survival. A good mixture of habitat for pheasants contains at least one area of winter cover of 8 hectares or more for every 20 square kilometres. Winter cover consists of blocks of vegetation that are never completely filled by snow. Large, thick patches of woody vegetation such as willows or shrubs, or tall vegetation such as cattails or sweet clover, make good winter cover. These patches of cover should be close to food, such as weed patches or unplowed grain fields. Berries of some shrubs, such as wild rose, serviceberry or buckbrush, are eaten as emergency food when normal food sources are depleted. The value of winter cover decreases as distances from the feeder areas increase. If pheasants have to travel far to feeding areas, they are exposed to weather and predators. Also, areas of good nesting cover close to winter cover are used far more intensively by hens than similar nesting cover that is farther from winter cover.

Shelterbelts, ditches and vegetation along irrigation ditches and fence lines provide travel lanes for pheasants throughout the year. Pheasants require cover to protect them from harsh weather and predators when moving between different cover types. Travel lanes with good overhead and ground cover can increase the quality of cover in an area by connecting feeding areas with winter cover and roosting areas.

One area often overlooked as valuable habitat, is the abandoned farmstead. These little bluffs of cover can often be "hives" of activity if they are located next to a food source. Travel lanes leading into the farmstead will entice many forms of wildlife to utilize this area. To be really attractive to wildlife, allow the grasses to grow up inside the abandoned farmstead. The more it takes on that "wild" look, the more attractive it becomes to pheasants and other wildlife.

HABITAT IMPROVMENT

Pheasant habitat can be improved by providing more shelter and food in the release area. Some methods are inexpensive and simple to implement yet extremely beneficial to pheasants and other wildlife. Straw bunches provide extra cover and food. By placing straw bunches along the edge of a cattail patch, you increase the effectiveness of this wintering area by adding to its size. Occasionally, farmers put old sheds lined with loose straw and some grain near cover. Pheasants feed in these shelters. Leaving harvested fields unplowed until spring provides waste grain. A 5 metre strip of crop left standing along shelterbelts or other patches of cover is an excellent food source during winter. If the feed station is too far away, an alternative food source for bad weather conditions and to minimize travel is needed.

Shelterbelt planting involves more effort and expense but offers good cover and feeding areas for wildlife in addition to benefits for agriculture. Multiple-row belts are more effective than single-row belts. By planting a combination of trees and shrubs, you can create a good mixture of cover types. See figure 3.

Changes in some farming practices can be beneficial for pheasants. Delaying haying operations until the end of June allows hens to hatch their eggs and the chicks to grow sufficiently to be able to avoid machinery. Restricting burning of weedy and grassy areas aids pheasants by retaining cover. Burning in spring removes nesting cover and scorches eggs while fall burning destroys winter feeding areas. Livestock can also limit pheasant numbers by grazing and trampling low ground cover in shelterbelts and, in winter, cattail and sedge patches. Restricting grazing along gullies, creeks, hillsides, irrigation canals, around wetlands and in bushy areas is good range management as well as benefiting pheasants and other wildlife.

WINTER FEEDING

Winter feeding is vitally important in central Alberta (generally north of Highways 27 and 9) as the long winters, often with much snow, severely stress pheasants. The open flight pen can be a feeding area as the pheasants know its location. The fence provides protection from ground predators and allows the pheasants to feed in security. By keeping feed available, you can observe the pheasants as they return to the pen.

However, some or all of your pheasants may not choose to use your open pens as a feed station. Also, if you have a closed pen you may choose to create a feeding station.

In selecting a site to place your feeding station, bear in mind that you not only attract birds to feed on the food you put out, you also attract predators to feed on the pheasants and a variety of other wildlife that also use the feeders. For this reason, it is best to create a number of feed stations spread over the area to give the pheasants a choice of feeding spots.

When selecting a feeding area, remember that along with predators wanting to take your pheasants, there are also winter storms. For this reason, place your feeders where they supply ample protection from both winter storms and predators (Figure 5).

Here are suggestions for winter feeding areas:

1. Abandoned farmsteads, with shelterbelts, grassy, weedy yards and buildings that provide protection for feeders.
2. Cattail slough--sloughs with cattails, brush and travel lanes offer good protection for pheasants.
3. Farmyard Shelterbelt--when cattle are fed next to, but not in the shelterbelt, often pheasants scrounge a meal with the cattle. This is made especially attractive when hay or straw stacks are present.
4. Creek Bottoms--or other natural drainage basins, afford good cover and supply natural travel lanes.

Be sure that no matter where you place your feeder it is not subject to drifting snow to render it useless as a feed station. Also, be sure to maintain your feeding areas as once the birds get used to it, they stay in the area. If you stop feeding, the birds either succumb to the perils of winter or move away.

Pheasants prefer wheat but utilize whatever you put in your feeder.

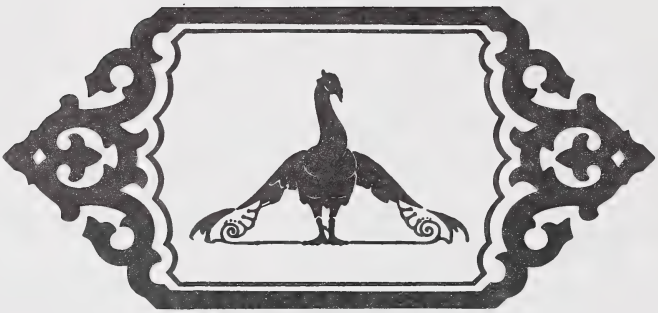
PREDATORS

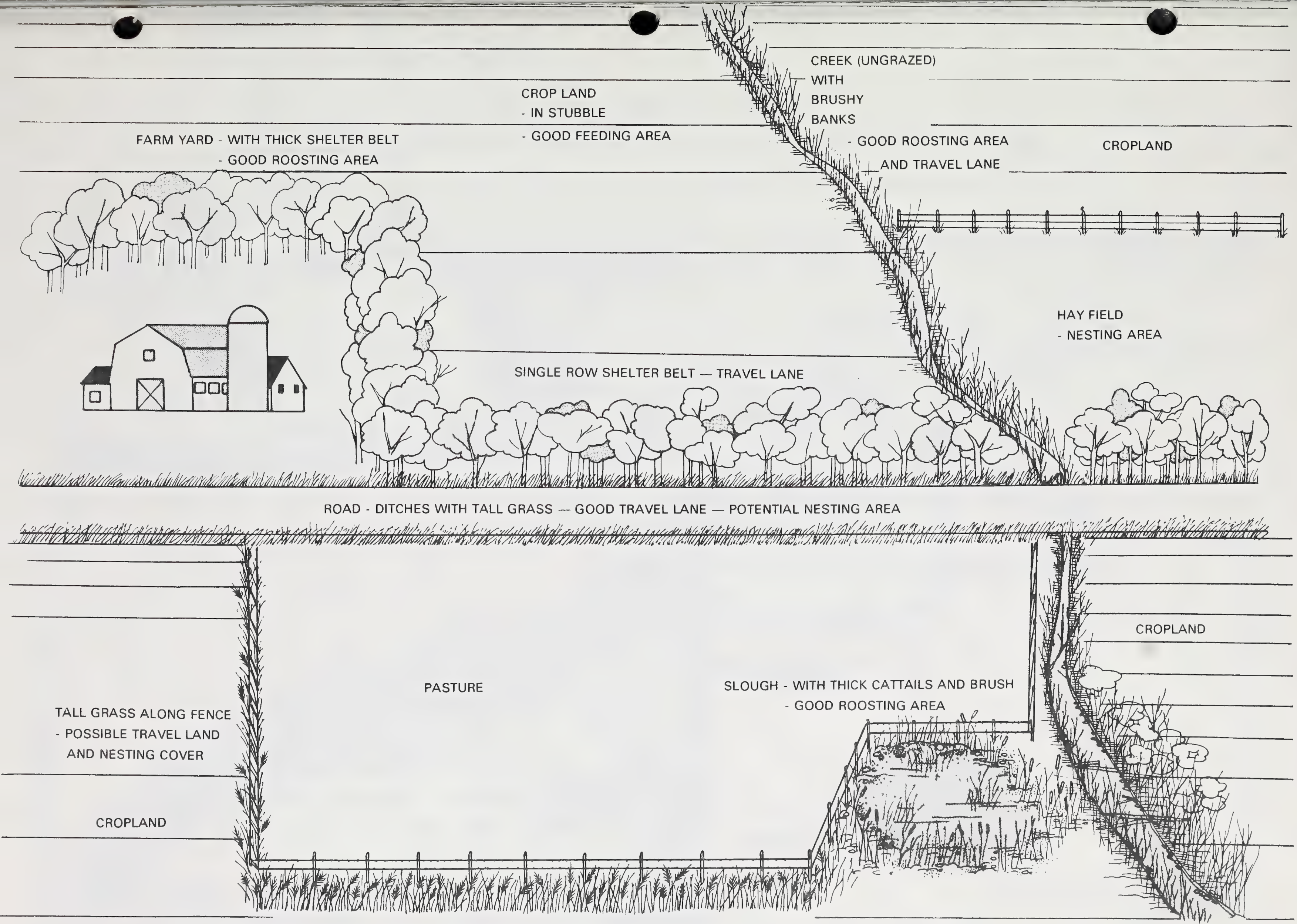
Predator control is no substitute for good habitat. Under no circumstances should you attempt to kill any birds of prey such as falcons, hawks, eagles, or owls as these birds are protected by law. Weasel and mink are fur-bearing animals and cannot be shot or trapped without special permits. If you need assistance with predator control, contact your local Fish and Wildlife officer.

Remember that natural predators play an important role in the balance of nature and the pheasants must learn to cope in their natural environment.

NEED HELP

If you have questions concerning any improvements you would like to make, do not hesitate to call the staff at the Wildlife Centre.

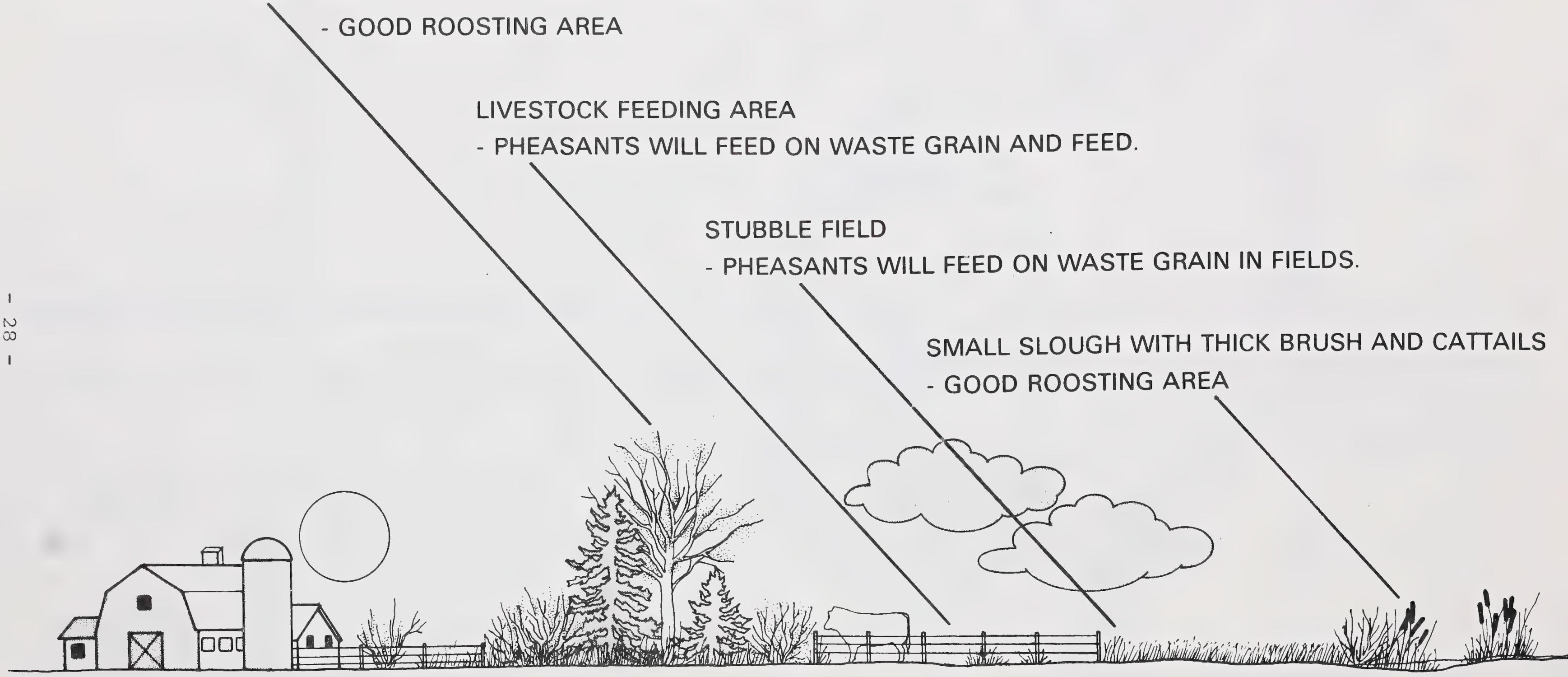




CREEK (UNGRAZED) WITH BRUSHY BANKS
- GOOD ROOSTING AREA AND TRAVEL LANE
CROP LAND
- IN STUBBLE
- GOOD FEEDING AREA
FARM YARD - WITH THICK SHELTER BELT
- GOOD ROOSTING AREA
CROPLAND
HAY FIELD
- NESTING AREA
SINGLE ROW SHELTER BELT — TRAVEL LANE
ROAD - DITCHES WITH TALL GRASS — GOOD TRAVEL LANE — POTENTIAL NESTING AREA
CROPLAND
PASTURE
SLOUGH - WITH THICK CATTAILS AND BRUSH
- GOOD ROOSTING AREA
TALL GRASS ALONG FENCE
- POSSIBLE TRAVEL LAND
AND NESTING COVER
CROPLAND

FIGURE 3 AERIAL OF FARM WITH GOOD MIXTURE OF FEEDING AREAS, ROOSTING AREAS ANS TRAVEL LANES FOR PHEASANTS AND OTHER WILDLIFE.

FIGURE 4



SHELTER BELT WITH SEVERAL ROWS OF SHRUBS AND TREES AND HIGH GRASS BETWEEN THE ROWS
- GOOD ROOSTING AREA

LIVESTOCK FEEDING AREA
- PHEASANTS WILL FEED ON WASTE GRAIN AND FEED.

STUBBLE FIELD
- PHEASANTS WILL FEED ON WASTE GRAIN IN FIELDS.

SMALL SLOUGH WITH THICK BRUSH AND CATTAILS
- GOOD ROOSTING AREA

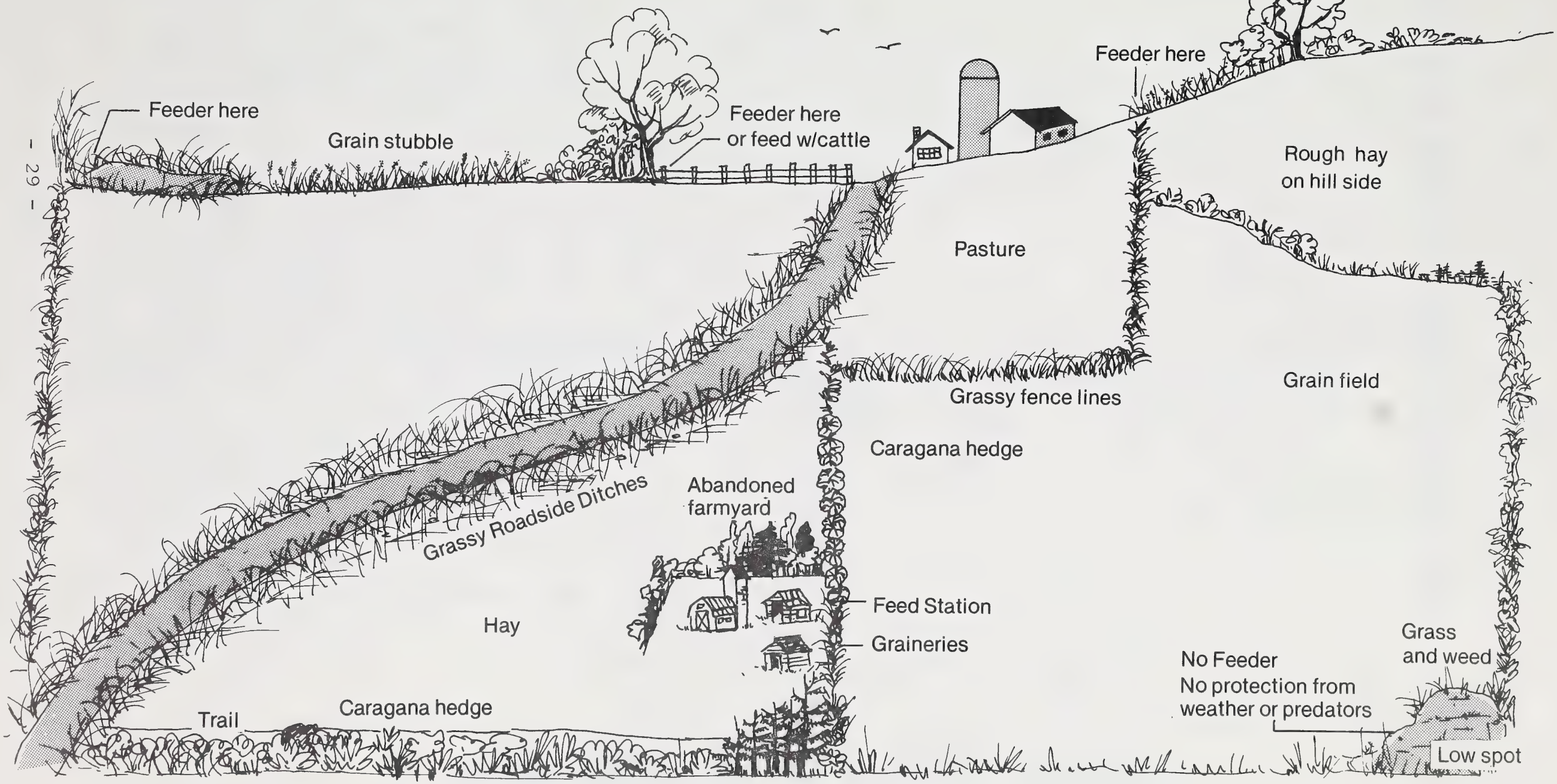
SIDEVIEW OF FARM WITH DIFFERENT COVER TYPES FOR PHEASANTS AND OTHER WILDLIFE IN FALL AND WINTER

FIGURE 5

What can your feed station feeder look like?

1. Graineries — grain just spread around.
2. Feeder — placed in old buildings or heavy bush.
3. Tray — placed in cover, building, brush, etc.
4. Cattle feeding area.
5. Five Gallon Pail — with holes punched in the botton and lid securely fastened to prevent spoiling of the feed.

Location of Feed Stations



PHEASANTS RAISING CHART

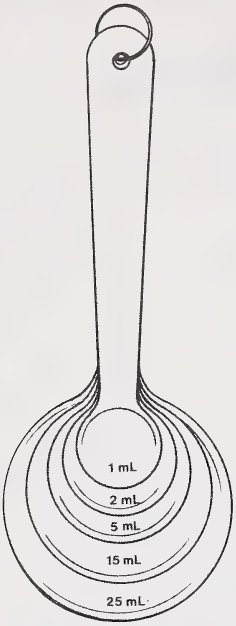
	FIRST							2nd	3rd	4th	5th	6-12	12th
	1	2	3	4	5	6	7	wk.	wk.	wk.	wk.	wk.	wk.
BROODING													
Keep guard around brooder	x	x	x										
Remove guard in day, replace at night				x	x								
Remove guard entirely						x							
Use litter cloth	x	x	x	x	x								
Keep brooder lamp at proper height to insure proper brooding temperatures	x	x	x	x	x	x	x	x	x				
Brooder left on day and night	x	x	x	x	x	x	x	x	x				
Brooder off in day, on at night										x			
Brooder off											x		
FEEDING													
Have proper feed in feeders all the time. Clean and refill feeder daily. Put feed on rough paper plates.	x	x	x	x	x	x							
Add chick grower to starter										x			
Mix grit with feed	x			x			x	x	x	x	x	x	
Have feeders in house and enclosed run								x	x	x	x		
Have feeders in flightpen												x	x
Add cracked grain to grower												x	
WATERING													
Clean and refill water founts daily. Give chicks warm water (cold is all right after third day)	x	x	x										
Have small stones or marbles in base of founts	x	x	x	x	x	x	x						
Have founts in house and enclosed run								x	x	x	x		
Have founts in flightpen												x	x
RANGING													
Keep chicks in brooder house	x	x	x	x	x	x	x						
Let chicks in yard if weather warm & dry								x					
Drive chicks into house at night, let out in day								x	x	x			
Give chicks free run of house and enclosed run both day and night											x		
Let chicks into flightpen; close house												x	x
RELEASE													x

FISH AND WILD LIFE OFFICES

- Athabasca
- Barrhead
- Blairmore
- Bonnyville
- Bragg Creek
- Brooks
- Calgary
- Camrose
- Canmore
- Cardston
- Claresholm
- Cochrane
- Cold Lake
- Drumheller
- Edmonton
- Edson
- Evansburg
- Fairview
- Foremost
- Fort Chipewyan
- Fort McMurray
- Grande Cache
- Grande Prairie
- High Level
- High Prairie
- High River
- Hinton
- Kananaskis
- Lac La Biche
- Lethbridge
- Manning
- Medicine Hat
- Nordegg
- Olds
- Oyen
- Peace River
- Pincher Creek
- Ponoka
- Provost
- Red Deer
- Rocky Mountain House
- St. Paul
- Slave Lake
- Smoky Lake
- Stettler
- Stony Plain
- Strathmore
- Valleyview
- Vegreville
- Vermilion
- Wetaskiwin
- Whitecourt

METRIC CONVERSION TABLE

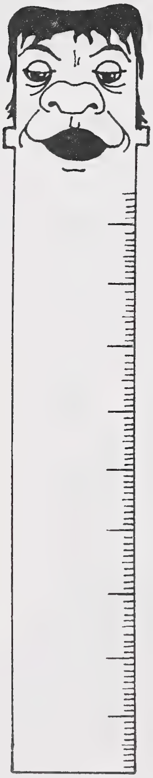
Approximate Conversion to
Metric Measures



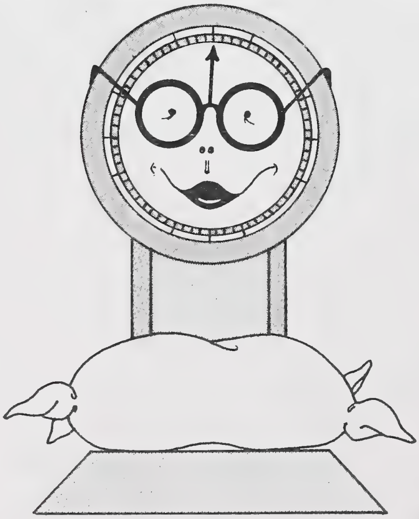
METRIC MEASURES ARE
AVAILABLE IN THESE SIZES

250 mL replaces 1 cup
500 mL replaces 2 cups

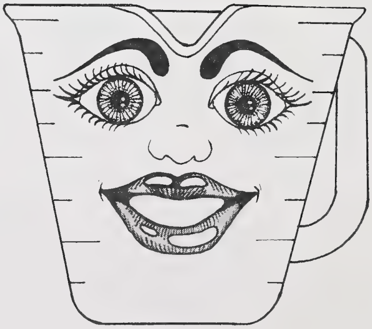
SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL	BASE UNIT
			MASS (weight)		
oz.	ounces	28.349	grams	g	
lb.	pounds	0.454	kilograms	kg	
ton	short tons (2000 lbs)	0.907	tonnes	t	gram
g	grams	0.035	ounces	oz.	
t	tonnes (1000 kg)	1.102	short tons	ton	
			VOLUME		
tsp.	teaspoons	5	millilitres	mL	
tbsp	tablespoons	15	millilitres	mL	
fl.oz.	fluid ounces	28.413	millilitres	mL	
pt.	pints	0.568	litres	L	
qt.	quarts	1.137	litres	L	
gal.	gallons	4.546	litres	L	litres
bu.	bushels	36.370	litres	L	
mL	millilitres	0.035	fluid ounces	fl.oz.	
L	litres	1.760	pints	pt.	
L	litres	0.880	quarts	qt.	
L	litres	0.220	gallons	gal.	
L	litres	0.027	bushels	bu.	
			LENGTH		
in.	inches	2.540	centimetres	cm	
ft.	feet	0.305	metres	m	
yd.	yards	0.914	metres	m	
mi.	miles	1.609	kilometres	km	
mm	milimetres	0.0394	inches	in.	metre
cm	centimetres	0.394	inches	in.	
m	metres	3.281	feet	ft.	
m	metres	1.094	yards	yd.	
km	kilometres	0.621	miles	mi.	
			ENERGY		
kcal	kilocalorie	4.186	kilojoules	kJ	joule
kJ	kilojoules	0.239	kilocaleries	kcal	



MUNSTER METRE
MEASURES LENGTH



SAM KILOGRAM
MEASURES WEIGHT

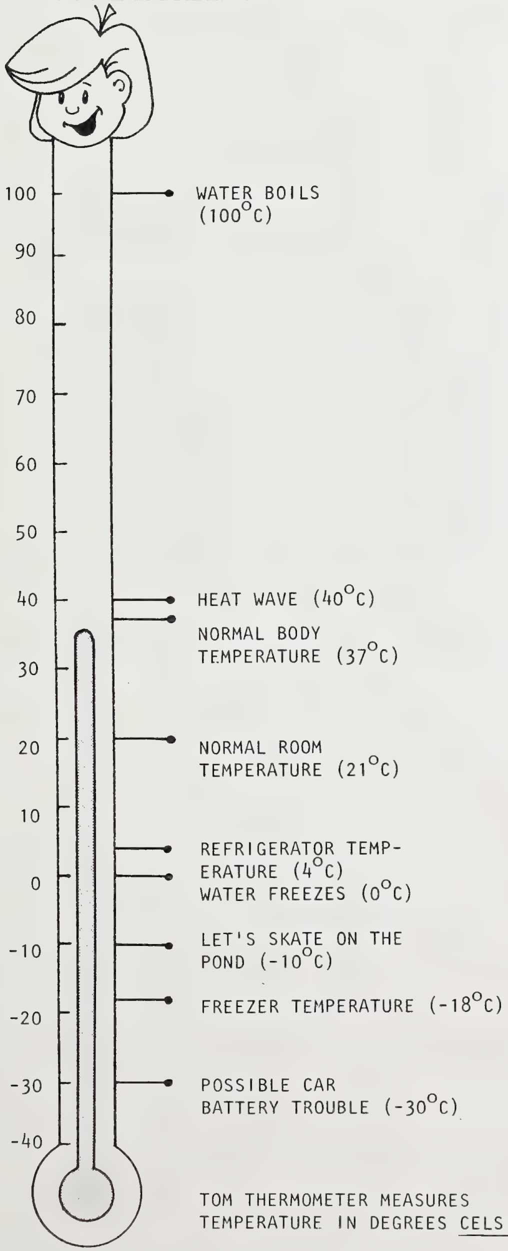


LILY LITRE
MEASURES VOLUME

METRIC MULTIPLES AND PREFIXES TABLE

Multiplying Factor	Prefix	Symbol
$1,000,000 = 10^6$	mega (meg a)	M
$1,000 = 10^3$	kilo (kil o)	k
$100 = 10^2$	hecto (hek to)	h
$10 = 10^1$	deka (dek a)	da
(Base Unit) $1 = 10^0$		
$0.1 = 10^{-1}$	deci (des i)	d
$0.01 = 10^{-2}$	centi (sen ti)	c
$0.001 = 10^{-3}$	milli (mil i)	m
0.000,001	micro (mi kro)	μ

(These prefixes may be applied to all metric base units.
Example: Base Unit = litre
Add kilo to litre (symbol kL) = kilolitre. The multiplying factor is 1000. This means a kilolitre equals 1000 litres.)


100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
WATER BOILS (100°C)
HEAT WAVE (40°C)
NORMAL BODY TEMPERATURE (37°C)
NORMAL ROOM TEMPERATURE (21°C)
REFRIGERATOR TEMPERATURE (4°C)
WATER FREEZES (0°C)
LET'S SKATE ON THE POND (-10°C)
FREEZER TEMPERATURE (-18°C)
POSSIBLE CAR BATTERY TROUBLE (-30°C)

TOM THERMOMETER MEASURES TEMPERATURE IN DEGREES CELSIUS (°C)

TEMPERATURE: °F = 9/5 + 32
°C = 5/9 - 32

OVEN TEMPERATURES:

	°C	°F
Very slow	120-135	250-275
Slow	150-165	300-325
Moderate	175-190	350-375
Hot	200-220	400-425
Very Hot	230-245	450-475
Near boil	245-290	475-500

ADDITIONAL METRIC INFORMATION

from:

Metric Branch
Alberta Government Services
12th Floor, Park Square
10001 Bellamy Hill
Edmonton, Alberta T5J 3C1

Metric Commission Canada
Box 4000
Ottawa, Ontario

Information Division
Canada Department of Agriculture
Ottawa, Ontario K1A 0C7

District Extension Office

OR

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